

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 200.8

|                 |            |             |                               |
|-----------------|------------|-------------|-------------------------------|
| Client ID:      | M130579    | Client:     | Alaskan Copper Works          |
| Date Received:  | 06/28/12   | Project:    | Metro Self Monitor PO M130579 |
| Date Extracted: | 06/29/12   | Lab ID:     | 206409-01 x10                 |
| Date Analyzed:  | 06/29/12   | Data File:  | 206409-01 x10.032             |
| Matrix:         | Water      | Instrument: | ICPMS1                        |
| Units:          | ug/L (ppb) | Operator:   | AP                            |

|                    |             |        |        |
|--------------------|-------------|--------|--------|
| Internal Standard: | % Recovery: | Lower  | Upper  |
| Germanium          | 86          | Limit: | Limit: |
|                    |             | 60     | 125    |

| Analyte: | Concentration<br>ug/L (ppb) |
|----------|-----------------------------|
| Chromium | 199                         |
| Nickel   | 142                         |
| Copper   | 188                         |
| Zinc     | <50                         |

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### Analysis For Total Metals By EPA Method 200.8

|                 |                |             |                               |
|-----------------|----------------|-------------|-------------------------------|
| Client ID:      | Method Blank   | Client:     | Alaskan Copper Works          |
| Date Received:  | Not Applicable | Project:    | Metro Self Monitor PO M130579 |
| Date Extracted: | 06/28/12       | Lab ID:     | I2-429 mb                     |
| Date Analyzed:  | 06/29/12       | Data File:  | I2-429 mb.008                 |
| Matrix:         | Water          | Instrument: | ICPMS1                        |
| Units:          | ug/L (ppb)     | Operator:   | AP                            |

|                    |             |        |        |
|--------------------|-------------|--------|--------|
| Internal Standard: | % Recovery: | Lower  | Upper  |
| Germanium          | 98          | Limit: | Limit: |
|                    |             | 60     | 125    |

| Analyte: | Concentration<br>ug/L (ppb) |
|----------|-----------------------------|
|----------|-----------------------------|

|          |    |
|----------|----|
| Chromium | <1 |
| Nickel   | <1 |
| Copper   | <1 |
| Zinc     | <5 |

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 07/05/12

Date Received: 06/28/12

Project: Metro Self Monitor PO M130579, F&BI 206409

**QUALITY ASSURANCE RESULTS  
FOR THE ANALYSIS OF WATER SAMPLES  
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 206390-02 (Matrix Spike)

| Analyte  | Reporting<br>Units | Spike<br>Level | Sample<br>Result | Percent<br>Recovery<br>MS | Percent<br>Recovery<br>MSD | Acceptance<br>Criteria | RPD<br>(Limit 20) |
|----------|--------------------|----------------|------------------|---------------------------|----------------------------|------------------------|-------------------|
| Chromium | ug/L (ppb)         | 20             | <1               | 101                       | 114                        | 71-130                 | 12                |
| Nickel   | ug/L (ppb)         | 20             | <1               | 100                       | 113                        | 71-120                 | 12                |
| Copper   | ug/L (ppb)         | 20             | 1.92             | 98                        | 117                        | 52-134                 | 18                |
| Zinc     | ug/L (ppb)         | 50             | 11.0             | 95 b                      | 110 b                      | 51-142                 | 15 b              |

Laboratory Code: Laboratory Control Sample

| Analyte  | Reporting<br>Units | Spike<br>Level | Percent<br>Recovery<br>LCS | Acceptance<br>Criteria |
|----------|--------------------|----------------|----------------------------|------------------------|
| Chromium | ug/L (ppb)         | 20             | 103                        | 80-119                 |
| Nickel   | ug/L (ppb)         | 20             | 107                        | 83-119                 |
| Copper   | ug/L (ppb)         | 20             | 108                        | 81-120                 |
| Zinc     | ug/L (ppb)         | 50             | 106                        | 82-120                 |

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## ENVIRONMENTAL CHEMISTS

### Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

206409  
 Send Report To Gerald Thompson  
 Company Askan Copper Works  
 Address 628 S. Hanford ST  
 City, State, ZIP Seattle WA 98134  
 Phone # 206-571-6033 Fax # 206-382-4309

SAMPLE CHAIN OF CUSTODY ME 06-28-12

AI2

|   |                       |   |
|---|-----------------------|---|
| SAMPLERS (signature)<br><u>[Signature]</u>    |                       | Page # <u>1</u> of <u>1</u>   |
| PROJECT NAME/NO.<br><u>Metro Self Monitor</u> | PO#<br><u>M130579</u> | TURNAROUND TIME<br><input type="checkbox"/> Standard (2 Weeks)<br><input checked="" type="checkbox"/> RUSH <u>2 day</u><br>Rush charges authorized by:                          |
| REMARKS                                       |                       | SAMPLE DISPOSAL<br><input checked="" type="checkbox"/> Dispose after 30 days<br><input type="checkbox"/> Return samples<br><input type="checkbox"/> Will call with instructions |

| Sample ID | Lab ID | Date    | Time | Sample Type | # of<br>containers | ANALYSES REQUESTED |              |               |               |                |     |  |   |  |  | Notes |  |  |  |  |
|-----------|--------|---------|------|-------------|--------------------|--------------------|--------------|---------------|---------------|----------------|-----|--|---|--|--|-------|--|--|--|--|
|           |        |         |      |             |                    | TPH-Diesel         | TPH-Gasoline | BTEX by 8021E | VOCs by 8021E | SVOCs by 8021E | HFS |  |   |  |  |       |  |  |  |  |
| M130579   | 01     | 6/28/12 | 1:30 | H2O         | 1                  |                    |              |               |               |                |     |  | X |  |  |       |  |  |  |  |
|           |        |         |      |             |                    |                    |              |               |               |                |     |  |   |  |  |       |  |  |  |  |
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Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

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|                                 |                                      |                         |                        |                        |
|---------------------------------|--------------------------------------|-------------------------|------------------------|------------------------|
| SIGNATURE<br><u>[Signature]</u> | PRINT NAME<br><u>Gerald Thompson</u> | COMPANY<br><u>Askan</u> | DATE<br><u>6/28/12</u> | TIME<br><u>2:34 PM</u> |
| Relinquished by:                |                                      |                         |                        |                        |
| Received by: <u>[Signature]</u> | <u>DO UD</u>                         | <u>FX BI</u>            | <u>11</u>              | <u>11</u>              |
| Relinquished by:                |                                      |                         |                        |                        |
| Received by:                    |                                      |                         |                        |                        |

Samples received at 23 °C

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

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Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

July 5, 2012

Gerald Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford  
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on June 28, 2012 from the Metro Self Monitor PO M130579, F&BI 206409 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
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